CS1800 Fall 2026

How many ways are there... ?

How many ways are there...?

How many ways are there...?

$|L| = 3$, $|T| = 2$

How many ways to spend an evening at Strangehouse if we watch one Laney show and then one Tom show?

How many ways are there...?

$|L| = 3$, $|T| = 2$

How many ways to spend an evening at Strangehouse if we watch one Laney show **and** then one Tom show?

How many ways are there...?

|L| = 3, |T| = 2

How many ways to spend an evening at Strangehouse if we watch one Laney show **and** then one Tom show?

$$3 * 2 = 6$$

How many ways are there...?

$|L| = 3$, $|T| = 2$

How many ways to spend an evening at Strangehouse if we watch one Laney show and then one Tom show, **or** one Tom show and then one Laney show?

How many ways are there...?

$|L| = 3$, $|T| = 2$

It's a shorter evening! How many ways to watch a Laney show **or** a Tom show?

How many ways are there...?

|L| = 3, |T| = 2

How many ways to watch two *different* Laney shows or two *different* Tom shows?

Ex:

- *archer,fg (Tom)*
- *matlock,wednesday (Laney)*
- *matlock,rookie (Laney)*

How many ways are there...?

|L| = 3, |T| = 2

How many ways to watch a Laney show and then a Tom show and then a *different* Laney show?

Ex:

- *matlock,fg,rookie*
- *rookie,archer,wednesday*
- *rookie,fg,wednesday*

How many ways are there...?

|L| = 3, |T| = 2

How many ways to watch a Laney show and then a Tom show and then a Laney show (same show ok!)?

Ex:

- *matlock,fg,matlock*
- *rookie,archer,wednesday*
- *rookie,fg,rookie*

How many ways are there...?

$|L| = 3$, $|T| = 2$

How many ways to watch two *different* Laney shows and one Tom show, in any order?

Ex:

- *laney,laney,tom*
- *laney,tom,laney*
- *tom,laney,laney*.

How many ways are there...?

$|L| = 3$, $|T| = 2$

How many ways to watch two Laney shows (same show ok!) and a Tom show, in any order?

How many ways are there...?

Creating bibs for a 5k: A capital letter following by a positive integer ≤ 100.

How many bibs exist?



chatgpt

How many ways are there...?

535 people run that 5k

How many ways to have a first place, second place, and third place finisher?

How many ways are there...?

535 people run a 5k; 100 non-binary runners, 200 women, 235 men

How many ways to have a first place, second place, and third place finisher in all three categories?

How many passwords can you make?

(under certain rules)
security = restrictions so you have to make it complicated, but not SO restrictive you have too few

Password Restrictions

1. 5, 6, or 7 characters
2. Alpha (lowercase) or numeric (0-9)
3. Repeats allowed

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How many passwords are there...

- of length 5?
- of length 6?
- of length 7?